Dated: December 08,2025

REQUIRMENT OF ELECTROMECHANICAL ACTUATOR

TENDER: CUSTOMIZED REQUIREMENT

REFERENCE: IMW/ACT/03

QUOTATION/ESTIMATE IS ALSO REQUIRED.

NO SPLITTING OF ORDER QUOTE VALIDITY: 90 DAYS

VALID COC

NO THIRD PARTY INVOLVEMENT.

TECHNICAL DETAILS: ATTACHED

SUPPORT OF PRODUCTION COMMITMENT

VALID CASE STUDY

CONTACT DETAILS: harry.garg.csio@csir.res.in

TERMS & CONDITIONS AS PER CSIO RULES.

Specification

Title:	Requirement of Electro-mechanical actuator
No.	IMW/ACT/03
Equipment:	Electro-mechanical Actuator

General Description:

1. The requirement is for Indian A/c platform. It should be mil-grade.
2. The qualified actuator will be preferred.
3. It is electro-mechanical actuator only.
4. If any actuator with specifications near to the desired specs. is available, will be considered.

Specification

Table of contents

1. Scope 3
2. General description and requirements 3
3. Maximum Weight 4
4. Mechanical Parameters (TBD) 4
5. Electrical Design Requirements 4
6. Electrical Interface 5

Specification

1. Scope

This document provides the specification for the Aerial Refueling Light Actuator used in the System for Aerial Refueling Light at the fighter aircraft.

2. General description and requirements

1. The ITEM should be rigid and compliant to Airworthy standards.
2. It should be fully sealed of dust, moisture.
3. The shaft, compatible mechanism, parts should be rigid and mil grade std.
4. The Aerial Refueling Light Actuator will be linear electromechanical actuator operated by a DC voltage of 28 V .
5. The required stroke is 44mm to 60mm from 7sec to 10 sec.
6. The outer body dimensions/weight is mentioned in the table below.
7. The details of the gear train or thread arrangement etc for linear motion/reduction stroke should be shared. How the linear motion is achieved, should be explained,
8. Provision of mechanical input device to drive the actuator manually in case of power supply is not available.
9. The stroke of the actuator should be limited electrically by micro switches and mechanically by non-adjustable end stops on each end of the stroke or better system should be there.
10. Signal switches should be implemented to indicate the retracted and the extended position of the actuator. The signal to indicate the operating status of the actuator should be there.
11. Actuator should be compliant to MIL STD 810-H, 704-D(MIL HAND BOOK), 461 C/E. The actuator should be EMI/EMC free.
12. Provision of flying leeds/connector/pig tail details should be provided. Pig tail will be preferred, (TBD)

Specification

3. Maximum Weight

The maximum weight of the actuator shall not exceed 1.5 Kg.

4. Mechanical Parameters (TBD)

Designation	**Value**
Operating Load	800-1000 N
Stroke	44-60mm
Extraction/ Retraction Time	<10 sec at Maximum load
Operating Temperature	-40 to +100 °C
Storage Temperature	-55 to +105 °C (TBD)
Actuator extraction length	Not more than 210 mm (TBD)
Retraction length	Not more than 160mm (TBD)
Actuator Width	Not more than 100 mm(TBD)
Actuator height/thickness	Not more than 100 mm(TBD)
Shaft Diameter	As per load requirements

5. Electrical Design Requirements

Designation	**Value**
Operating Voltage Range	10 to 36 VDC
Operating Voltage nominal	28 VDC
Current Consumption at nominal load	≤ 3.0 Amps
Inrush Current	≤ 15.0 Amps
Insulation Resistance	≥50 MΩ
Bonding Resistance at bonding lug to actuator body	≤ 20 mΩ
Bonding Resistance to actuator body	≤ 20 mΩ

Specification

6. Electrical Interface

The electrical Interface shall be a Pig-Tail. The cable from the actuator to open end has to be covered by a shrinking tube.

Wire	Wire definition
1	GND
2	EN+
3	EN-
4	RS-485B
5	CAN_H
6	CAN_L
7	GND
8	V+
9	V+
10	GND
11	GND
12	RS-485A
13	GND
CASE	CHASIS